PREFACE

Dear readers, You are offered the fourth topical issue on the problems of adaptive optics prepared under the initiative of the Institute of Atmospheric Optics, Siberian Branch of the Russian Academy of Sciences. As far as we know, previous topical issues (1985, 1990, 1991) devoted to various aspects of the use of adaptive optical systems in the atmosphere attracted much interest of scientists in our country and abroad. This circumstance as well as the extending international scientific cooperation among scientists from different countries have led us to an idea of preparing a new topical issue with contributions from foreign scientists. To continue this tradition we are planning to make such topical issues of international participation.

The papers by scientists from China and Germany are published in this issue. It should be noted that, at present, perhaps only five countries perform quite wide investigations on adaptive optics, they are the USA, Russia, Germany, China, and France. In preface to this issue I would like to introduce our authors from Germany and China to readers.

Professor Wenhan Jiang is the leading scientist in China in the field of adaptive optics. In his paper he describes the development of scientific researches in this field at the Institute of Optics and Electronics, Chinese Academy of Sciences beginning from 1980.

Dr. Marc S. Sarazin is the leading scientist of the European Southern Observatory whose headquarters is in Munich (Germany). Marc Sarazin is the head of the work on seeking for a suitable place for assembling the unique adaptive interferometer-telescope (Very Large Telescope).

The authors of the paper "Scintillation and Wave Front Measurements" Zeng Zongyong, Weng Ningguan, and Zhang Jun are from Hefei, China. They work at the Institute of Optics and Fine Mechanics and study the problems on light propagation through the turbulent atmosphere and applications of adaptive optics.

It is remarkable that in 1992 year the number of international conferences at which different aspects of adaptive optics have been discussed has greatly grown. First of all, I would like to note the active participation of the International Society for Optical Engineering (SPIE) in organizing the conferences. In this year the following symposia and conferences have been held:

– the international symposium on Laser and Sensor Engineering, Los Angeles, California, USA, January 19–24, 1992;

– the international symposium on Aerospace Sensing, Orlando, Florida, USA, April 20–24, 1992;

– the international symposium on Optical Systems Design, Berlin, Germany, September 14–18, 1992 (under the auspices of SPIE, European Optical Society and Optical Society of America), and

– the international conference on Wave Propagation in Random Media, Seattle, Washington, USA, August 3–7, 1992.

A lot of different aspects of adaptive optics and its applications to atmospheric studies have been widely discussed at all of these conferences.

It should be recognized that at present applied adaptive optics has demonstrated some successful applications first of all, for designing large astronomical telescopes. That was convincingly shown at the conference on Adaptive Optics for Large Telescope which was held in Hawaii, USA, August 17-21, 1992. Unfortunately, presentations of Russian scientists at this conference were limited because of funding problems. The major part of presentations was from American scientists.

The latter circumstance is especially important for estimating the positive contribution of SPIE. The possibility of obtaining different information from this society is really invaluable. Here, undoubtedly, the Russian department of SPIE headed by E.I. Akopov plays quite a positive role.

Current situation in Russian Science is not optimistic. Therefore, for us, as it seems to me, the necessity to save the scientific community is a very important problem now. The scientific journals are one of the element of this community. Accordingly, the editorial board of the journal of Atmospheric and Oceanic Optics does and will do its best in the future to save high scientific level of the journal.

We believe that our current topical issue devoted to the problem of adaptive optics will be of interest to readers.

Professor V.P. Lukin, editor

0235-6880/92/12 797-01 $02.00